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Question Paper Code : 21243

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2015.

Eighth Semester

Civil Engineering

CE 2071/080100066/CE 811 — REPAIR AND REHABILITATION OF
STRUCTURES

(Regulations 2008)

(Common to PTCE 2071 – Repair and Rehabilitation of Structures for
B.E. (Part-Time) Seventh Semester Civil Engineering – Regulations 2009)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. State the rapid structural assessment order.
2. What are the causes of distress in concrete structures?
3. What are the symptoms of design error in buildings?
4. How will you prevent cracks due to biological attack?
5. How will you select the repair materials?
6. What are the special materials used in expansive cement?
7. State the limitations of slab jacking technique of rehabilitation.
8. What do you understand about under pinning?
9. List the methods of reducing leakage in concrete structures.
10. What is meant by acid etching?

PART B — (5 × 16 = 80 marks)

11. (a) Explain the assessment procedure for evaluating a damaged structure with help of a flow chart.

Or

- (b) Discuss the various facets of maintenance. Explain briefly the various causes of deterioration of concrete.

12. (a) Describe the various corrosion prevention techniques.

Or

- (b) What are the checks to be carried out on the day of making concreting to ensure quality of concrete? Explain them.

13. (a) Explain the methods of improving ductility and impact resistance of concrete with the help of Fibre Reinforced Concrete.

Or

- (b) (i) Discuss the difference between sulphur concrete and sulphur-infiltrated concrete. (8)

- (ii) Explain the types of polymer concrete composites with their advantages. (8)

14. (a) Enumerate the various techniques of demolition to be adopted for dilapidated structures.

Or

- (b) Write short notes on the following :

- (i) Epoxy injection technique (4)

- (ii) Polymer coating for rebars (4)

- (iii) Vacuum concrete in repairs (4)

- (iv) Plate bonding technique. (4)

15. (a) What are the problems due to low member strength? How will you improve the capacity of beams and columns?

Or

- (b) Discuss the repair and rehabilitation methods to be done under the following situations :

- (i) To overcome distress due to chemical disruption (8)

- (ii) To overcome distress due to fire. (8)